WE CLAIM:

1. A process for producing 1,3-propanediol comprising the steps of:

a) forming an aqueous solution of 3-hydroxypropanal,

b) hydrogenating the 3-hydroxypropanal to form a first crude 1,3-propanediol mixture comprising 1,3-propanediol, water, and MW 132 cyclic acetal,

c) distilling the first crude 1,3-propanediol mixture to remove water and low boiling impurities and form a second crude 1,3-propanediol mixture,

d) contacting the second crude 1,3-propanediol mixture with an acid form cationic exchange resin at a temperature of from about 50 to about 150ºC to convert the MW 132 cyclic acetal to more volatile cyclic acetals and/or other degradation products, and

e) separating the more volatile cyclic acetals and/or other degradation products from the 1,3-propanediol by distillation or gas stripping.

2. The process of claim 1 wherein steps d) and e) are carried out together such that the volatile cyclic acetals and/or other degradation products are separated from the 1,3-propanediol as they are formed.

3. The process of claim 1 wherein the temperature in step d) is from about 80 to about 120ºC.

4. The process of claim 1 wherein the second crude 1,3-propanediol mixture is contacted with the cationic exchange resin batchwise for from about 1 to about 5 hours.

5. The process of claim 1 wherein the second crude 1,3-propanediol mixture is contacted with the cationic exchange resin in a continuous reaction vessel at a weight hourly space velocity of about 0.1 to about 10.

6. The process of claim 1 comprising the further step of distilling the 1,3-propanediol to separate 1,3-propanediol from high boiling impurities formed as a result of step d).

7. A process for producing 1,3-propanediol comprising the steps of:

a) forming an aqueous solution of 3-hydroxypropanal,

b) hydrogenating the 3-hydroxypropanal to form a first crude 1,3-propanediol mixture comprising 1,3-propanediol, water, and MW 132 cyclic acetal,

c) distilling the first crude 1,3-propanediol mixture to remove water and low boiling impurities and form a second crude 1,3-propanediol mixture,

d) contacting the second crude 1,3-propanediol mixture with an acidic zeolite at a temperature of from about 70 to about 250ºC to convert the MW 132 cyclic acetal to more volatile cyclic acetals and/or other degradation products, and

e) separating the more volatile cyclic acetals and/or other degradation products from the 1,3-propanediol by distillation or gas stripping.

8. The process of claim 7 wherein steps d) and e) are carried out together such that the volatile cyclic acetals and/or other degradation products are separated from the 1,3-propanediol as they are formed.

9. The process of claim 7 wherein the temperature in step d) is from about 90 to about 170ºC.

10. The process of claim 7 wherein the second crude 1,3-propanediol mixture is contacted with the zeolite batchwise for from about 1 to about 5 hours.

11. The process of claim 7 wherein the second crude 1,3-propanediol mixture is contacted with the zeolite in a continuous reaction vessel at a weight hourly space velocity of about 0.1 to about 10.

12. The process of claim 7 comprising the further step of distilling the 1,3-propanediol to separate 1,3-propanediol from high boiling impurities formed as a result of step d).